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NOTES:**

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Best Practices in Project Management

Background

This best practices study is among ADOT's latest efforts to improve project and program delivery. ADOT, along with several other state departments of transportation, started to focus on project management in the 1980s (amid nationwide trends toward privatization and the "reinvention of government").

ADOT's project management model is best described as a weak matrix. The word "weak" here is not pejorative. Rather, it designates a form of project organization in which many of the characteristics of a functional organization are retained. In the DOT context, this means that technical managers are roughly equal in status and authority to the project manager, who serves primarily as a coordinator. In contrast, under strong matrix models, the project manager is dedicated to this function, has considerable authority, and is often supported by administrative staff. Interviewees generally concur that ADOT's weak matrix model works well in this team-oriented organization.

Under ADOT's weak matrix model, project management responsibilities reside

in the various functional units of the organization. Project teams as opposed to project managers are ultimately responsible for developing projects and making decisions. Technical responsibility (including quality) is distributed across functional and geographical units. According to this model, the project manager shares responsibility with the technical manager and the technical leader assigned to his or her team.

In its interviews with ADOT project managers, the consultant team found widespread uncertainty as to the role and authority of the ADOT project manager. There are differences between groups (e.g., ADOT executives and ADOT program managers and project managers) as well as differences within these groups regarding the appropriate role of the project manager. Project managers who had worked in the private sector or in state DOTs with strong matrix approaches felt particularly unsure as to their roles.

Approach

The researchers evaluated ADOT's project management process against industry

best practices. Dye Management Group, Inc.'s methodology:

- Involved ADOT employees, business partners, and customers in identifying the critical issues confronting ADOT.
- Analyzed ADOT's documented policies and procedures.
- Analyzed actual ADOT practices.
- Evaluated issues, policies and procedures, and actual practices against industry best practice.

Risks from Business As Usual

ADOT's ability to manage a cost-effective construction program delivery and be accountable to policy-makers and customers regarding the cost and timeliness of highway projects is at risk. The following is ADOT's current situation:

- There is little consistency in project management.
- ADOT is not actively managing and controlling budget and scope.
- The organization does not hold itself and managers accountable for scope, budget, and quality.
- ADOT's process, tools, and procedures do not enable the most effective use of human and other resources.
- There will be continued impacts to ADOT's organizational capacity and health.

Benefits of Change

The benefits of an improved project management process include:

- Ability to establish, manage, and actively control project costs to ensure

cost-effective delivery of the construction program.

- Capacity to realize delivery efficiencies.
- Ability to address quality control and associated cost issues.
- Increased transparency and accountability for ADOT.
- Better human resource management and increased staff productivity.
- Increased precision in managing program delivery and performing cash management across multiple years.

Desired Outcome

Following are the desired outcomes from improving ADOT's project management process:

- ADOT will be able to manage construction program delivery against scope, schedule, budget, and quality objectives on a department-wide basis at the program and project levels.
- ADOT will hold itself accountable for delivering the program against scope, schedule, budget, and quality objectives.
- The strategic importance of project management will be emphasized by ADOT management
- ADOT will increase its project focus to establish a project management culture.
- The importance and role of project managers and the project management discipline will be elevated at ADOT.
- A consistent process at the project level will be established. In this way, more discipline and predictability will be brought to the process. This will

strengthen ADOT's ability to manage overall program delivery.

- Scopes will be set and budgets managed at the project level. The role and authority of project managers will be strengthened to accomplish these objectives. The decision-making will be proactive, recognizing that in project delivery scope, schedule, and budget decisions impact each other.

Recommendations

The study findings provide the following recommendations for the new process and strongly support the idea that they should be implemented as a package. Together they provide the elements of a reformed project management process.

1. Develop ADOT's project management culture by providing clear, consistent, executive communication and leadership regarding the department-wide importance of project management objectives and their accomplishment.
2. Establish department-wide ownership and accountability by senior management for strategic objective accomplishment in scope, budget, schedule, and quality.
3. Establish measurable ADOT strategic objectives for scope, budget, schedule, and quality and measure their accomplishment.
4. Establish department-wide the roles, responsibilities, and authority of project managers, project teams, technical managers, technical leaders, and team members. Strengthen the project manager's level of authority.
5. Strengthen the consistency of project management across ADOT by establishing consistent project management procedures.
6. Revise project management policies, guidelines, and manuals to reflect these consistent project management requirements.
7. Establish measurable performance objectives for project managers that are aligned with ADOT strategic objectives and project managers' roles, responsibilities, and authority.
8. Develop and maintain department-wide project status information regarding project scope, schedule, and budget.
9. Strengthen scope management by revising policies and procedures to establish greater accountability and reporting mechanisms.
10. Establish a standardized process for project schedule planning and management.
11. Establish and manage project budgets.
12. Use quantitative information to evaluate ADOT labor requirements and establish work standards by activity to support project scheduling and budgeting.
13. Perform multi-project resource loading to evaluate the "deliverability of the program" and support overall program management.
14. Create a department-wide organizational focal point for all project management at ADOT.
15. Establish project management as a visible and attractive ADOT career path.

16. Continue to emphasize and amplify training and professional development for project managers. This recommendation builds on the existing level of commitment to training for project managers and team members.

Implementation

ADOT needs to implement the package of recommendations in their entirety. It is recognized that there are a number of improvements underway to address quality, improve management reporting systems, and enhance partnering and other aspects that impact project management; however, the Tactical Advisory Committee (TAC) at their meeting on February 28, 2003 endorsed these recommendations and initiated their request that ADOT management pursue their timely implementation. The TAC expressed agreement that partial change exacerbates the problems by not really getting to the root cause of the problems. For successful implementation, ADOT must implement the recommendations as a package, provide executive commitment, and allocate the necessary resources.

Initial Steps and Organization

The study recommends the following implementation steps:

1. Secure Executive Sponsorship for Implementation.
2. Appoint an Implementation Manager and Team.
3. Have the Team Develop and Implement the Reformed Process.

Resource Requirements

Successful implementation requires the dedication of resources to manage implementation and resources to address individual recommendation areas. Initial implementation steps will determine resource requirements. Although ADOT's budget is highly constrained at present, successful implementation will yield a high return on investment and quickly pay for itself. The allocation of resources will determine how quickly the recommendations can be implemented.

The full report: *Best Practices in Project Management* by David Rose, Dye Management Group, Inc., City Center Bellevue, Suite 1700, 500 108th Ave., NE, Bellevue, WA 98004-5500 (Arizona Department of Transportation, report number FHWA-AZ-03-511, published May 2003) is available from the Arizona Transportation Research Center, 206 S. 17 Ave., mail drop 075R, Phoenix, AZ 85007; phone 602-712-3138.